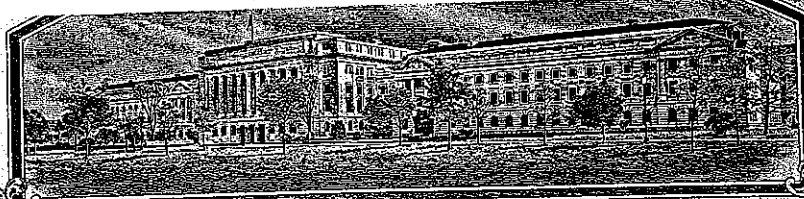


No.

200200133



# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

## Kansas Agricultural Experiment Station

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. IN THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS SPECIFIED BY THE OWNER OF THE VARIETY. (U.S. STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT, COMMON

'2145'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this sixteenth day of September, in the year two thousand two.

Attest:

*R. M. J. [Signature]*

Commissioner  
Plant Variety Protection Office  
Agricultural Marketing Service

*[Signature]*

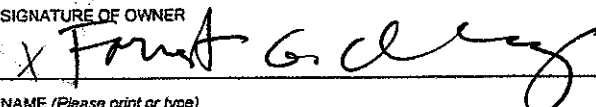
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

**APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE**  
(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2428).

1. NAME OF OWNER KANSAS AGRICULTURAL EXPERIMENT STATION		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME KS97P0630-4-5		3. VARIETY NAME 2145	
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country) Waters Hall Kansas State University Manhattan, KS 66506		5. TELEPHONE (include area code) 785-532-6147		FOR OFFICIAL USE ONLY PVPO NUMBER <b>200200133</b>	
		6. FAX (include area code) 785-532-6563			
7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) University		8. IF INCORPORATED, GIVE STATE OF INCORPORATION		9. DATE OF INCORPORATION April 8, 2002	
10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. (First person listed will receive all papers) Vernon A. Schaffer Agronomy Department Kansas State University 2004 Throckmorton Hall Manhattan KS 66506				FILING AND EXAMINATION FEES: \$ 2705.00 DATE 4-8-2002 CERTIFICATION FEE: \$ 320.00 DATE 6/11/02	
11. TELEPHONE (include area code) 785-532-6115		12. FAX (include area code) 785-532-6094		13. E-MAIL VAS@KSU.EDU	
14. CROP KIND (Common Name) Wheat		15. GENUS AND SPECIES NAME OF CROP Triticum aestivum		16. FAMILY NAME (Botanical) Gramineae	
17. IS THE VARIETY A FIRST GENERATION HYBRID? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		18. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse) a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of Variety d. <input checked="" type="checkbox"/> Exhibit D. Additional Description of the Variety (Optional) e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Owner's Ownership f. <input checked="" type="checkbox"/> Voucher Sample (2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository) g. <input checked="" type="checkbox"/> Filing and Examination Fee (\$2,705), made payable to "Treasurer of the United States" (Mail to the Plant Variety Protection Office)			
19. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? See Section 83(a) of the Plant Variety Protection Act <input checked="" type="checkbox"/> YES (If "yes", answer items 20 and 21 below) <input type="checkbox"/> NO (If "no", go to item 22)		20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES? IF YES, WHICH CLASSES? <input checked="" type="checkbox"/> FOUNDATION <input checked="" type="checkbox"/> REGISTERED <input checked="" type="checkbox"/> CERTIFIED			
21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? IF YES, SPECIFY THE <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED NUMBER 1,2,3, etc. See reverse (If additional explanation is necessary, please use the space indicated on the reverse.)		22. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES? <input checked="" type="checkbox"/> YES USA Fall, 2001 <input type="checkbox"/> NO IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. (Please use space indicated on reverse.)			
23. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT (PLANT BREEDER'S RIGHT OR PATENT)? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. (Please use space indicated on reverse.)		24. The owners declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate. The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act. Owner(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.			
SIGNATURE OF OWNER 		SIGNATURE OF OWNER			
NAME (Please print or type) Dr. Forrest Chumley		NAME (Please print or type)			
CAPACITY OR TITLE Assoc. Director, Ag Exp Station		DATE <input checked="" type="checkbox"/>		CAPACITY OR TITLE	
				DATE	

**GENERAL:** To be effectively filed with the Plant Variety Protection Office (PVPO), ALL of the following items must be received in the PVPO: (1) Completed application form signed by the owner; (2) completed exhibits A, B, C, E; (3) for a seed reproduced variety at least 2,500 viable untreated seeds, for a hybrid variety at least 2,500 untreated seeds of each line necessary to reproduce the variety, or for tuber reproduced varieties verification that a viable (in the sense that it will reproduce an entire plant) tissue culture will be deposited and maintained in an approved public repository; (4) check drawn on a U.S. bank for \$2,705 (\$320 filing fee and \$2,385 examination fee), payable to "Treasurer of the United States" (See Section 97.6 of the Regulations and Rules of Practice.) Partial applications will be held in the PVPO for not more than 90 days, then returned to the applicant as unfilled. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 500, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. Retain one copy for your files. All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. **DO NOT** use masking materials to make corrections. If a certificate is allowed, you will be requested to send a check payable to "Treasurer of the United States" in the amount of \$320 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

Plant Variety Protection Office

Telephone: (301) 504-5518

FAX: (301) 504-5291

Homepage: <http://www.ams.usda.gov/science/pvpo/pvp.htm>

#### ITEM

- 18a. Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method; (2) the details of subsequent stages of selection and multiplication; (3) evidence of uniformity and stability; and (4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified
- 18b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:
- (1) identify these varieties and state all differences objectively;
  - (2) attach statistical data for characters expressed numerically and demonstrate that these are clear differences; and
  - (3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.
- 18c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.
- 18d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.
- 18e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.
19. If "Yes" is specified (*seed of this variety be sold by variety name only, as a class of certified seed*), the applicant **MAY NOT** reverse this affirmative decision after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. (See Regulations and Rules of Practice, Section 97.103).
22. See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.
23. See Section 55 of the Act for instructions on claiming the benefit of an earlier filing date.

#### 21. CONTINUED FROM FRONT (Please provide a statement as to the limitation and sequence of generations that may be certified.)

With owner's approval, unlimited generations of Foundation and two generations of Certified, otherwise one generation each of Foundation, Registered and Certified.

#### 22. CONTINUED FROM FRONT (Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)

#### 23. CONTINUED FROM FRONT (Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).)

**NOTES:** It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. There is no charge for filing a change of address. The fee for filing a change of ownership or assignment or any modification of owner's name is specified in Section 97.175 of the regulations. (See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.)

To avoid conflict with other variety names in use, the applicant must check the appropriate recognized authority. For example, for agricultural and vegetable crops, contact: Seed Branch, AMS, USDA, Room 213, Building 306, Beltsville Agricultural Research Center-East, Beltsville, MD 20705. Telephone: (301) 504-8089. <http://www.ams.usda.gov/is/seed/is-sd.htm>

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this collection of information is (0581-0055). The time required to complete this information collection is estimated to average 1.4 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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S&T-470 (04-01) designed by the Plant Variety Protection Office with WordPerfect 8.0a. Replaces STD-470 (02-89) which is obsolete.

Exhibit A. Origin and Breeding History - Revised 6/15/02

The pedigree of KS97P0630-4-5 is HBA142A/HBZ621A//Abilene. The pedigrees of HBA142A and HBZ621A are unknown. Abilene is a hard red winter wheat cultivar released by AgriPro. KS97P0630-4-5 is derived directly from segregating material donated to Kansas State University by Pioneer Hi-bred in 1989. F<sub>2</sub> seed from the cross designated as HBK0630 was transferred from Pioneer to KSU and bulk F<sub>2</sub> plots of HBK0630 were grown in the field at Manhattan, KS in 1990. F<sub>3</sub> seed was obtained by harvesting the population in bulk. In 1991, bulk F<sub>3</sub> populations were grown in the field at Manhattan, KS and Hutchinson, KS. Approximately 200 individual heads were pulled from the F<sub>3</sub> populations. These heads were threshed individually and planted as F<sub>3,4</sub> head rows at Manhattan, KS in 1992. During the 1992 growing season, superior head rows were identified (based on height, maturity and disease resistance) and eight to ten heads were pulled from each selected row. These heads were threshed individually, but no effort was made to maintain the identity of the original F<sub>4</sub> row from which each head was pulled. In 1993, the F<sub>4,5</sub> head rows were grown at Manhattan, KS. Superior rows (again, based on height, maturity and disease resistance) were selected. Six heads were pulled from each selected row and the remainder of the row was harvested in bulk. The individual heads were kept separate, based on their row of origin. One of the rows harvested in 1993 was designated HBK0630-4. The bulked seed from HBK0630-4 was tested in the "short row" unreplicated yield trial at Manhattan, KS and Hutchinson, KS in 1994. At the same time, the individual heads from the originating row were threshed and planted as head rows at Manhattan, KS in 1994. HBK0630-4 was dropped from further testing due to lack of uniformity, but all six of the F<sub>5,6</sub> head rows from HBK0630-4 were selected (based on height, maturity and disease resistance) and harvested in bulk, including a row designated HBK0630-4-5. HBK0630-4-5 was tested in the unreplicated "short row" yield trial at Manhattan and Hutchinson in 1995. Based on agronomic performance and quality characteristics, HBK0630-4-5 was advanced to the Preliminary Yield Trial 1, a replicated test planted at Hutchinson, KS and Manhattan, KS in 1996. HBK0630-4-5 was advanced to the Advanced Yield Trial 1, a replicated test planted at Manhattan, Hutchinson, Parson, Hays, Colby and Tribune in 1997. In 1998, HBK0630-4-5 was tested in the Kansas Intrastate Nursery (KIN), which contains the most elite material from the KSU breeding programs. This replicated nursery was planted at seventeen locations across Kansas. HBK0630-4-5 was tested as KS97P0630-4-5 in the Southern Regional Performance Nursery (SRPN) in 1998. In 1999, KS97P0630-4-5 was again tested in the KIN and SRPN nurseries. In 2000, KS97P0630-4-5 was entered in the KIN. Based on agronomic and quality data, the Kansas State Variety Release Committee voted to approve increase of KS97P0630, with potential release scheduled for August, 2001.

2145 is uniform. Variants are limited to plants with brown glume color that occur at a frequency less than 1 in 5,000 plants, slightly taller plants at a frequency less than 1 in 1,000 plants and plants with long beak length occur at a frequency of less than 1 in 25. Four percent of 2145 plants will exhibit a "Fawn" response to the Phenol test.

2145 is stable. When sexually reproduced, the variety remains unchanged in its essential and distinctive characteristic. 2145 was observed to be uniform and stable during the three generations prior to release.

2145

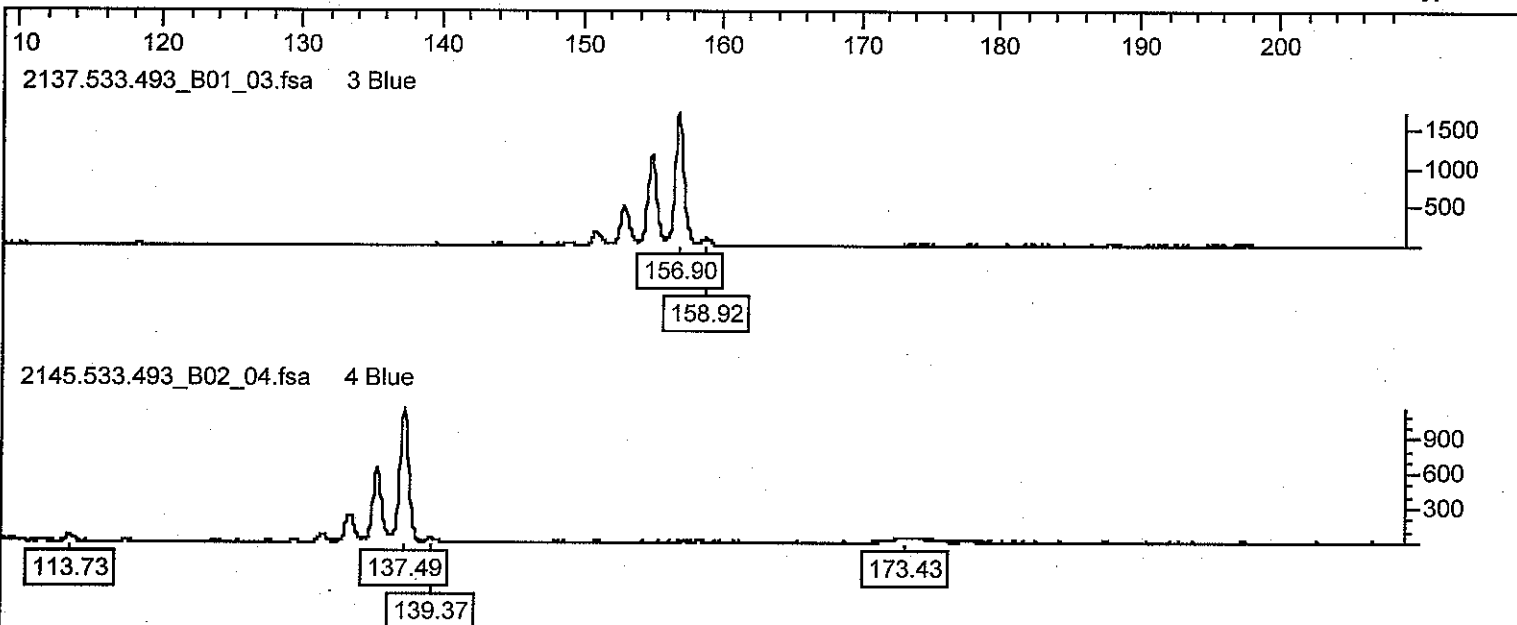
Exhibit B. Statement of Distinctness

Of the currently grown cultivars, 2145 most clearly resembles 2137. 2145 differs from 2137 in the following characteristics: 2145 is heterogeneous for resistance to Hessian fly while 2137 is resistance.

2137 and 2145 can be easily distinguished from one another using microsatellite marker Xgwm493. This marker amplified a fragment of approximately 138 base pairs from 2145 and a fragment of approximately 158 base pairs from 2137 (See attached data). The microsatellite analysis was replicated to ensure repeatability. The marker we used was described by Roder et al. (1998).

Reference:

Roder, Marion S., Victor Korzun, Katja Wendehake, Jens Plaschke, Marie-Helene Tixier, Phillipe Leroy, and Martin Ganal, 1998. A Microsatellite Map of Wheat. Genetics 149:2007-2023.



Replicated Jan 22, 2002

Done by Kristi Hill-Ambroz  
Microsat desc. by  
Protocol: (Röder et al, 1995)

5

REPRODUCE LOCALLY. Include form number and date on all reproductions.

Form Approved - OMB No. 0581-0055

Public reporting burden for this collection of information is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Agriculture, Clearance Officer, OIRM, AG Box 7630, Jamie L. Whitten Building, Washington, D.C. 20250. When replying, refer to OMB No. 0581-0055 and form number in your letter. Under the PRA of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

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U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE AND TECHNOLOGY  
PLANT VARIETY PROTECTION OFFICE  
BELTSVILLE, MD 20705

EXHIBIT C  
(Wheat)

OBJECTIVE DESCRIPTION OF VARIETY  
WHEAT (*Triticum* spp.)

NAME OF APPLICANT(S) Kansas Agricultural Experiment Station	FOR OFFICIAL USE ONLY PVPO NUMBER <b>200200133</b>
ADDRESS (Street and No. or RD No., City, State, and Zip Code) Waters Hall Kansas State University Manhattan, KS 66506	VARIETY NAME 2145
	TEMPORARY OR EXPERIMENTAL DESIGNATION KS97P0630-4-5

PLEASE READ ALL INSTRUCTIONS CAREFULLY: Place the appropriate number that describes the varietal character of this variety in the boxes below. Place a zero in the first box (e.g.  or ) when number is either 99 or less or 9 or less respectively. Data for quantitative plant characters should be based on a minimum of 100 plants. Comparative data should be determined from varieties entered in the same trial. Royal Horticultural Society or any recognized color standard may be used to determine plant colors; designate system used: Please answer all questions for your variety; lack of response may delay progress of your application.

1. KIND:

1=Common

2=Durum

3=Club

4=Other (SPECIFY):

2. VERNALIZATION:

1=Spring

2=Winter

3=Other (SPECIFY):

3. COLEOPTILE ANTHOCYANIN:

1=Absent

2=Present

4. JUVENILE PLANT GROWTH:

1=Prostrate

2=Semi-erect

3=Erect

5. PLANT COLOR (boot stage):

1 = Yellow-Green

2 = Green

3 = Blue-Green

6. FLAG LEAF (boot stage):

1 = Erect

2 = Recurved

1 = Not Twisted

2 = Twisted

7. EAR EMERGENCE:

Number of Days Earlier Than Scout 66

Number of Days Later Than Jagger

## 8. ANTHOR COLOR:

1 = Yellow

2 = Purple

## 9. PLANT HEIGHT (from soil to top of head, excluding awns):

cm Taller Than 2163

\*

cm Shorter Than 2137

\*

\* Relative to a PVPO-Approved Commercial Variety Grown in the Same Trial

## 10. STEM:

## A. ANTHOCYANIN

1 = Absent

2 = Present

## B. WAXY BLOOM

1 = Absent

2 = Present

## C. HAIRINESS (last internode of rachis)

1 = Absent

2 = Present

## D. INTERNODE (SPECIFY NUMBER)

1 = Hollow

2 = Semi-solid

3 = Solid

## E. PEDUNCLE

1 = Absent

2 = Present

cm Length

## 11. HEAD (at Maturity):

## A. DENSITY

1 = Lax

2 = Middense

3 = Dense

## B. SHAPE

1 = Tapering

2 = Strap

3 = Clavate

4 = Other (SPECIFY):

## C. CURVATURE

1 = Erect

2 = Inclined

3 = Recurved

## D. AWNEDNESS

☒

1 = Awnless

2 = Apically Awnletted

3 = Awnletted

4 = Awned

MAH 5/29/2002

## 12. GLUMES (at Maturity):

## A. COLOR

1 = White

2 = Tan

3 = Other (SPECIFY):

## C. BEAK

1 = Obtuse

2 = Acute

3 = Acuminate

## B. SHOULDER

1 = Wanting

2 = Oblique

3 = Rounded

4 = Square

5 = Elevated

6 = Apiculate

## D. LENGTH

1 = Short

2 = Medium

(ca. 7mm)

(ca. 8mm)

3 = Long (ca. 9mm)



12. GLUMES (at Maturity) Continued:

200200133

E. WIDTH

- ☒ 2 1 = Narrow (ca. 3mm) 2 = Medium (ca. 3.5mm)  
3 = Wide (ca. 4mm)

13. SEED:

A. SHAPE

- ☐ 1 1 = Ovate 2 = Oval 3 = Elliptical

B. CHEEK

- ☐ 1 1 = Rounded 2 = Angular

E. Color

- ☐ 3 1 = White 2 = Amber 3 = Red  
4 = OTHER (Specify)

F. TEXTURE

- ☐ 1 1 = Hard 2 = Soft

C. BRUSH

- ☐ 1 1 = Short 2 = Medium 3 = Long  
☐ 1 1 = Not Collared 2 = Collared

D. CREASE

- ☐ 2 1 = Width 60% or less of Kernel  
2 = Width 80% or less of Kernel  
3 = Width Nearly as Wide as Kernel  
☐ 1 1 = Depth 20% or less of Kernel  
2 = Depth 35% or less of Kernel  
3 = Depth 50% or less of Kernel

G. PHENOL REACTION (see instructions):

- ☐ 4 1 = Ivory 2 = Fawn  
3 = Light Brown 4 = Dark Brown  
5 = Black

14. DISEASE: (0=Not Tested; 1=Susceptible; 2=Resistant; 3=Intermediate; 4=Tolerant)

PLEASE INDICATE THE SPECIFIC RACE OR STRAIN TESTED

- |   |  |
|---|--|
| <input type="checkbox"/> 3 Stem Rust ( <i>Puccinia graminis</i> f. sp. <i>tritici</i> ) | <input type="checkbox"/> 2 Leaf Rust ( <i>Puccinia recondita</i> f. sp. <i>tritici</i> )     |
| <input type="checkbox"/> 3 Stripe Rust ( <i>Puccinia striiformis</i> )                  | <input type="checkbox"/> 0 Loose Smut ( <i>Ustilago tritici</i> )                            |
| <input type="checkbox"/> 1 Tan Spot ( <i>Pyrenophora tritici-repentis</i> )             | <input type="checkbox"/> 0 Flag Smut ( <i>Urocystis agropyri</i> )                           |
| <input type="checkbox"/> 0 Halo Spot ( <i>Selenophoma donacis</i> )                     | <input type="checkbox"/> 0 Common Bunt ( <i>Tilletia tritici</i> or <i>T. laevis</i> )       |
| <input type="checkbox"/> 0 <i>Septoria nodorum</i> (Glume Blotch)                       | <input type="checkbox"/> 0 Dwarf Bunt ( <i>Tilletia controversa</i> )                        |
| <input type="checkbox"/> 0 <i>Septoria avenae</i> (Speckled Leaf Disease)               | <input type="checkbox"/> 0 Karnal Bunt ( <i>Tilletia indica</i> )                            |
| <input type="checkbox"/> 3 <i>Septoria tritici</i> (Speckled Leaf Blotch)               | <input type="checkbox"/> 1 Powdery Mildew ( <i>Erysiphe graminis</i> f. sp. <i>tritici</i> ) |
| <input type="checkbox"/> 1 Scab ( <i>Fusarium</i> spp.)                                 | <input type="checkbox"/> 0 "Snow Molds"  |

14. Disease (Continued) (0=Not Tested; 1=Susceptible; 2=Resistant; 3=Intermediate; 4=Tolerant)

PLEASE INDICATE THE SPECIFIC RACE OR STRAIN TESTED

<input type="checkbox"/> 0 "Black Point" (Kernel Smudge)	<input type="checkbox"/> 0 Common Root Rot ( <i>Fusarium</i> , <i>Cochliobolus</i> and <i>Bipolaris</i> spp.)
<input type="checkbox"/> 0 Barley Yellow Dwarf Virus (BYDV)	<input type="checkbox"/> 0 Rhizoctonia Root Rot ( <i>Rhizoctonia solani</i> )
<input type="checkbox"/> 2 Soilborne Mosaic Virus (SBMV)	<input type="checkbox"/> 0 Black Chaff ( <i>Xanthomonas campestris</i> pv. <i>translucens</i> )
<input type="checkbox"/> 2 Wheat Yellow (Spindle Streak) Mosaic Virus	<input type="checkbox"/> 0 Bacterial Leaf Blight ( <i>Pseudomonas syringae</i> pv. <i>syringae</i> )
<input type="checkbox"/> 1 Wheat Streak Mosaic Virus (WSMV)	<input type="checkbox"/> Other (SPECIFY)
<input type="checkbox"/> Other (SPECIFY)	<input type="checkbox"/> Other (SPECIFY)
<input type="checkbox"/> Other (SPECIFY)	<input type="checkbox"/> Other (SPECIFY)
<input type="checkbox"/> Other (SPECIFY)	<input type="checkbox"/> Other (SPECIFY)

15. INSECT: (0=Not Tested; 1=Susceptible; 2=Resistant; 3=Intermediate; 4=Tolerant)

PLEASE SPECIFY BIOTYPE (where needed)

<input type="checkbox"/> 3 Hessian Fly ( <i>Mayetiola destructor</i> )	<input type="checkbox"/> Other (SPECIFY)
<input type="checkbox"/> 0 Stem Sawfly ( <i>Cephus</i> spp.)	<input type="checkbox"/> Other (SPECIFY)
<input type="checkbox"/> 0 Cereal Leaf Beetle ( <i>Oulema melanopa</i> )	<input type="checkbox"/> Other (SPECIFY)
<input type="checkbox"/> 1 Russian Aphid ( <i>Diuraphis noxia</i> )	<input type="checkbox"/> Other (SPECIFY)
<input type="checkbox"/> 1 Greenbug ( <i>Schizaphis graminum</i> )	<input type="checkbox"/> Other (SPECIFY)
<input type="checkbox"/> Aphids	<input type="checkbox"/> Other (SPECIFY)

16. ADDITIONAL INFORMATION ON ANY ITEM ABOVE, OR GENERAL COMMENTS

## Quality characteristics of KS97P0630-4-5

			MILLING		MIXOGRAPH			BAKING		
			flour yield	flour pro % 14% mb	mixo abs. %	mixo peak	bake abs.%	mix time	loaf volume	
Year	Nursery	VARIETY ID								
1999	kin	KS97P0630-4-5	68.810	12.7	63.5	4.7	61.5	5.1	1000	
1999	kin	2137	69.350	11.5	59.5	4.1	60.5	4.6	955	
1999	KIN-WEST	2137	68.660	11.0	61.5	3.7	61.5	4.4	885	
1999	KIN-WEST	KS97P0630-4-5	67.320	12.5	65.5	4.3	62.5	5.3	985	
1998	kin-east	2137	71.630	10.5	59.5	3.1	60.5	3.8	900	
1998	kin-east	KS97P0630-4-5	67.430	12.6	65.5	4.6	63.5	4.8	1065	
1998	kin-irr	2137	70.430	12.7	61.5	2.9	60.5	3.1	1000	
1998	kin-irr	KS97P0630-4-5	67.050	14.4	64.5	3.0	62.5	3	1075	
1998	kin-cen	2137	71.410	10.4	57.5	3.5	61.5	3.8	900	
1998	kin-cen	KS97P0630-4-5	68.190	11.4	59.5	4.2	62.5	4.8	935	
1997	ayn-1-bulk	2137	68.900	12.8	64.50	3.60	63.5	4	945	
1997	ayn-1-bulk	KS97P0630-4-5	68.400	11.0	64.50	4.20	62.5	4	1070	

Each sample is a composite from nurseries grown at several locations

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE**EXHIBIT E**  
**STATEMENT OF THE BASIS OF OWNERSHIP**

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S)  KANSAS AGRICULTURAL EXPERIMENT STATION	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER  KS 97P0630-4-5	3. VARIETY NAME  2145
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country)  Waters Hall Kansas State University Manhattan, KS 66502	5. TELEPHONE (include area code)  785-532-6147	6. FAX (include area code)  785-532-6563
7. PVPO NUMBER  <b>200200133</b>		

8. Does the applicant own all rights to the variety? Mark an "X" in appropriate block. If no, please explain. ☒ YES ☐ NO9. Is the applicant (individual or company) a U.S. national or U.S. based company? ☒ YES ☐ NO  
If no, give name of country10. Is the applicant the original owner? ☐ YES ☒ NO If no, please answer one of the following:

a. If original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. national(s)?

☐ YES ☐ NO If no, give name of country

b. If original rights to variety were owned by a company(ies), is(are) the original owner(s) a U.S. based company?

☒ YES ☐ NO If no, give name of country

11. Additional explanation on ownership (if needed, use reverse for extra space):

**PLEASE NOTE:**

Plant variety protection can be afforded only to owners (not licensees) who meet one of the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definition.

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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To file a complaint, write the Secretary of Agriculture, U.S. Department of Agriculture, Washington, D.C. 20250, or call 1-800-245-6340 (voice) or (202) 720-1127 (TDD). USDA is an equal employment opportunity employer.

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